

UartTool Host Computer Operation and Configuration Guide

1. Obtaining the Host Computer Software

Host Computer Software Download Address:

<https://jiajiaeye.com/wp-content/uploads/2026/09/JiajiaEye-UartTool-Setup.zip>

Operating environment: Windows system; the USB-to-serial driver must be installed in advance

2. Basic Software Communication Configuration

Open the host computer software  and enter the device communication configuration interface;

COM Port: Select the USB serial port currently connected to the radar (if no COM port appears, check the driver);

Baud Rate: Default 9600, modifiable according to the actual firmware configuration;

Click Open Port to complete the hardware connection.

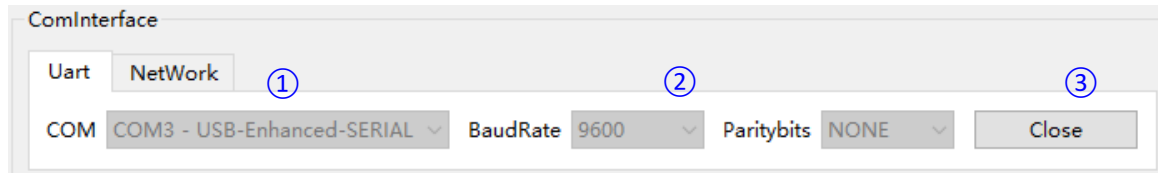


Fig. 1 Serial Communication Settings Diagram

3. Device Basic Information Configuration

Click Detect Current Device to read: model, version number, 485 address, range, blind zone, and installation height;

Click Read Real-time Data to read: Air height and water depth;

Supported parameters for modification: 485 address (1–247), baud rate, range, blind zone, and installation height. After modification, click Save All Configurations — parameters are retained after power loss.

80G

DeviceInfo

DeviceID

1 ~ 247

DeviceModel

YLO158

Version

20260602

Range

40.00

m

BlindZone

0.050

m

AirHeight

0.713

m

WaterDepth

0.489

m

GetDeviceInfo

RealTimeData

ConfigInfo

InstallDiagram

Function

Modbus

485Addr

127

BaudRate

9600

▼

InstallHeight

1.202

m

ComMode

Response

▼

PushCycle

0

ms

PushProtocol

Modbus

▼

LimitFilterAmplitude

10

cm

LimitFilterTimes

0.0

s

SaveAllConfig

RestoreFactorySetting

SpectrumOutput

FirmwareUpdate

Fig. 2 Host Computer Parameter Display Diagram

4. Installation Height Configuration

Installation Height: the vertical distance from the radar probe to the bottom of the measured target

Configuration steps: Enter the actual installation height (unit: m) → click Save All Configurations

Calculation logic: Water depth / Level = Installation height – Real-time Air height

Example below: Installation height 1 m. Click Save All Configurations, then click Get Real-time Data. The real-time Air height displays 0.442 m and the real-time level displays 0.760 m, i.e. $0.442\text{ m} + 0.760\text{ m} = 1\text{ m}$

DeviceModel

YLO158

Version

20260602

Range

40.00

m

BlindZone

0.050

m

AirHeight

0.442

m

WaterDepth

0.760

m

GetDeviceInfo

RealTimeData

485Addr

127

BaudRate

9600

▼

InstallHeight

1

m

ComMode

Response

▼

PushCycle

0

ms

PushProtocol

Modbus

▼

LimitFilterAmplitude

10

cm

LimitFilterTimes

0.0

s

SaveAllConfig

RestoreFactorySetting

SpectrumOutput

FirmwareUpdate

Fig. 3 Host Computer Installation Height Configuration Diagram

5. Communication Mode Configuration

5.1 Query-Response Mode

Select Query-Response → Save Configuration

Click Read Real-time Data; the radar returns the current Air height / level data

ConfigInfo

InstallDiagram

Function

Modbus

485Addr

127

BaudRate

9600

InstallHeight

1

m

ComMode

Response

PushCycle

0

ms

PushProtocol

Modbus

LimitFilterAmplitude

10

cm

LimitFilterTimes

0.0

s

SaveAllConfig

RestoreFactorySetting

SpectrumOutput

FirmwareUpdate

[2026-08-29 13:59:24:024]# SEND
AT+REALWATERDEPTH

[2026-08-29 13:59:24:372]# RECV
REALAIRHEIGHT=0.473m
REALWATERDEPTH=0.527m

Fig. 5 Query-Response Diagram

5.2 Active Push Mode

Select Active Push → Set the push period (default 300 ms)

Select the push protocol (ASCII/Modbus) → Save Configuration → the radar automatically outputs real-time data periodically.

ConfigInfo

InstallDiagram

Function

Modbus

485Addr

127

BaudRate

9600

InstallHeight

1

m

ComMode

ActivePush

PushCycle

300

ms

PushProtocol

Modbus

LimitFilterAmplitude

10

cm

LimitFilterTimes

0.0

s

SaveAllConfig

RestoreFactorySetting

SpectrumOutput

FirmwareUpdate

[2026-08-29 14:08:51:171]# RECV
REALWATERDEPTH=4.474m

[2026-08-29 14:08:51:678]# RECV
REALWATERDEPTH=4.474m

[2026-08-29 14:08:52:172]# RECV
REALWATERDEPTH=4.474m

Fig. 5 Active Push Diagram

6. FFT Spectrum

Click Spectrum Output on the interface to display the radar FFT spectrum in real time.

X-axis: distance / frequency point (corresponding to the physical distance from the radar to the target)

Y-axis: Echo signal strength

Purpose: Observe the target main peak, noise floor, and interference peaks to assess signal quality

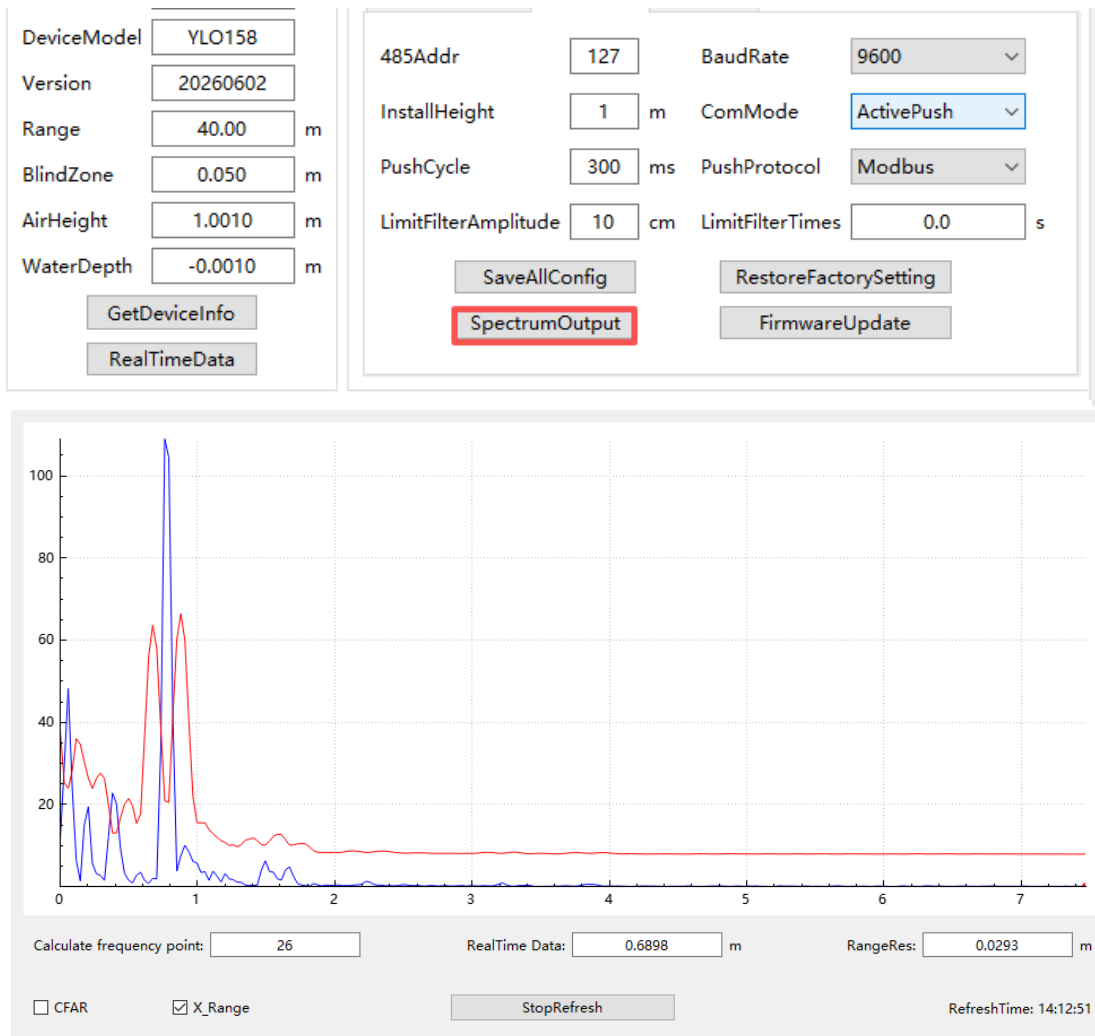


Fig. 6 Radar FFT Spectrum

7. Filter Parameter Configuration

Change Range: the maximum allowed variation per single measurement (unit: cm); a single reading exceeding this range is judged as abnormal data.

Duration: the duration of consecutive anomalies, used to avoid transient interference.

Parameter explanation: Between two ranging measurements, if the difference exceeds 10 cm it is judged as interference. The system only considers the data to be truly changing after exceeding 10 cm continuously for 15 s, and only then pushes new data. Before pushing new data, the radar keeps outputting the data from before the change.

ConfigInfo

InstallDiagram	Function	Modbus	
485Addr	127	BaudRate	9600
InstallHeight	1 m	ComMode	Response
PushCycle	0 ms	PushProtocol	Modbus
LimitFilterAmplitude	10 cm	LimitFilterTimes	15 s

SaveAllConfig RestoreFactorySetting
SpectrumOutput FirmwareUpdate

Fig. 7 Amplitude-Limiting Filter Parameter Diagram

If the radar needs to respond quickly, the filtering can be disabled through the following two operations:

Operation 1: Set the duration to 0, i.e. disable the amplitude-limiting filter. (See Fig. 8)

LimitFilterAmplitude 10 cm LimitFilterTimes 0 s

SaveAllConfig RestoreFactorySetting
SpectrumOutput FirmwareUpdate

Fig. 8 Diagram of Disabling the Amplitude-Limiting Filter

Operation 2: Disable the sliding-window filter. (See Fig. 9)

In the command send window, send AT+SLIDWINFILTERNUM=0

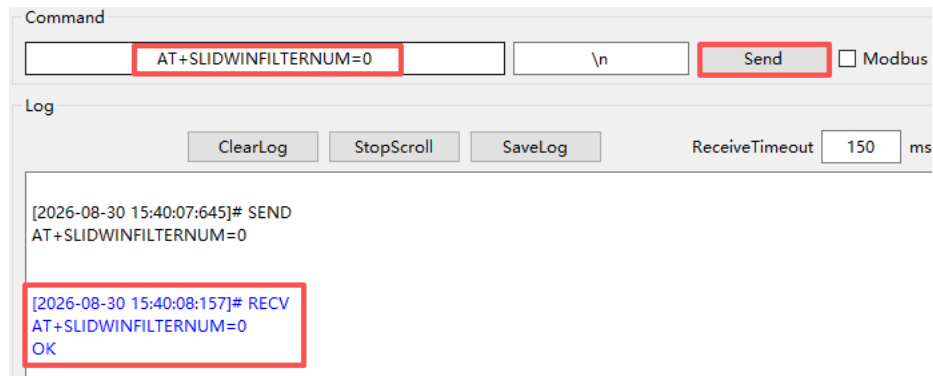


Fig. 9 Disable the sliding-window filter

8. Firmware Upgrade

Ensure the serial port is properly connected and the radar is in Boot mode
Click Host Computer Firmware Upgrade, select the corresponding .bin upgrade file, and wait for the progress bar to complete. After a successful upgrade, the radar restarts automatically

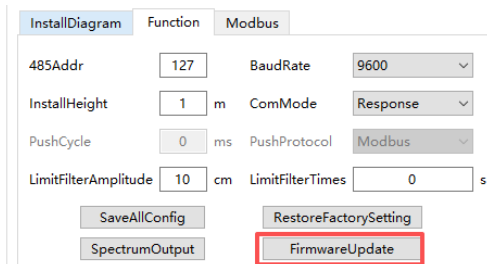


Fig. 9 Click Firmware Upgrade

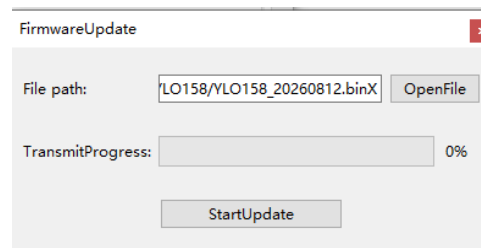


Fig. 10 Load .bin Upgrade File

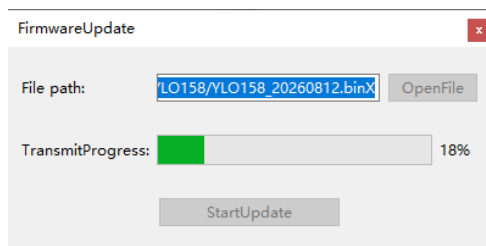


Fig. 11 Upgrading in Progress

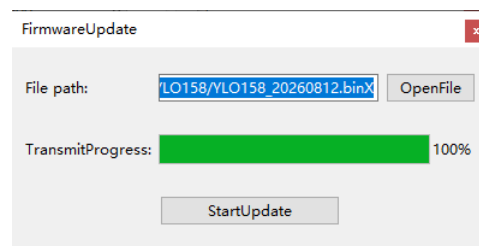


Fig. 12 Upgrade Completed

9. Modbus Register Configuration

This interface is used to configure the parameters for the radar sensor to communicate with the host computer / PLC via the Modbus protocol, including data register addresses, function codes, data types, and units. After configuration, standard Modbus commands can be used to read key data such as real-time level, Air height, and installation height.

		RegAddr	FunCode	DataType	Unit
WaterDepth	0x	0A0B	04 ▾	FLOATLITTLE ▾	m ▾
AirHeight	0x	0A0F	04 ▾	FLOATLITTLE ▾	m ▾
InstallHeight	0x	204A	03 ▾	FLOATLITTLE ▾	m ▾
AirHeight(cm)	0x	0000	03 ▾	INT16 ▾	cm ▾
AirHeight(mm)	0x	0001	03 ▾	INT16 ▾	mm ▾

SaveAllConfig

Notes:

Function Code 03: Read Holding Registers, used to read configuration-type / parameter-type data (such as installation height)

Function Code 04: Read Input Registers, used to read real-time measurement data (such as real-time level and Air height)